UNITED STATES PATENT AND TRADEMARK OFFICE

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RYMAN, DANIEL J

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 July 2007*.

2a)☐ This action is **FINAL**.　　　2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☒ Claim(s) *3,4,7,8 and 15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 17 July 2007 has been entered.

2.   Applicant's arguments with respect to claims 1-12 have been considered but are moot in

view of the new ground(s) of rejection.

Claim Objections

3.   Claim 3 is objected to because of the following informalities: in line 2, "resource of the"

should be "resource to the". Appropriate correction is required.

4.   Claim 4 is objected to because of the following informalities: in lines 1-2, "the

information" should be "the status information" and, in line 3, "links re-allocate" should be

"links to re-allocate". Appropriate correction is required.

5.   Claim 7 is objected to because of the following informalities: in line 9, "respecting"

should be "respectively". Appropriate correction is required.

6.   Claim 8 is objected to because of the following informalities: in line 1, "the sending

step" should be "the providing step" since there is no sending step in claim 7. Appropriate

correction is required.

7.   Claim 15 is objected to because of the following informalities: in line 2, "the trunk"

should be "a trunk". Appropriate correction is required.

Claim Rejections - 35 USC § 102

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

9.   Claims 1-3,5-7,12, 13, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by

Buyukkoc et al. (USPN 6,463,062), of record.

10.   Regarding claim 1, Buyukkoc discloses a data network for communicating data between

a sender unit and a receiver unit, comprising: a core network including relay elements

intercoupled by data links (Fig. 1, ref. 10, and col. 4, lines 16-23, where the backbone network,

i.e. a core network, includes ATM switches, i.e. relay elements, intercoupled by data links); a

gateway element coupled to the core network and to the sender unit, the receiver unit being

coupled to the core network (Fig. 1, ref. 210-320, and col. 4, lines 19-25, where the edge nodes,

i.e. gateway element, are coupled to the backbone network and customers, i.e. sender unit and

receiver unit, wherein "coupled to the core" is a broad phrase which permits indirect coupling);

the gateway element having at least one information table identifying at least one route from the

gateway element through the core network to the receiver unit (col. 7, lines 52-61, where the

edge node, i.e. gateway element, has a database, i.e. at least one information table, identifying

VPIs that are available for reaching a given destination node, i.e. at least one route from the edge

node through the network to the receiver, see col. 5, lines 46-49), including data links which

constitute the at least one route (col. 7, lines 52-61, where database identifies the links involved

in each VPI), allocations of predetermined communication resources of the data links (col. 12,

lines 49-54, where, in one embodiment, the edge nodes calculate the status of pre-determined

routes through the network using the total bandwidth used on each link, and col. 9, lines 27-37,

where the status information is determined by a comparison of the traffic on each link to the

capacity of the link, such that the edge nodes must have allocations of the capacity of the links,

i.e. predetermined communications resources on the data links, so that the edge nodes can

perform the status determination, see also col. 10, lines 21-26), and status information indicative

of an amount of currently used communication resources of the data links (col. 12, lines 49-54,

where the edge nodes know the total bandwidth used on each link) and an amount of currently

available communication resources of the data links (col. 9, lines 27-37, where the status

information is indicative of an amount of currently available communications resources of the

data links).

11.   Regarding claim 2, Buyukkoc discloses a method of management of data communication

through a core network between a sender unit and a receiver unit that includes the steps of:

defining at least one communicative route through the core network between the sender unit and

the receiver unit that includes a plurality of network links that each have a predetermined

communication resource (col. 5, lines 46-51, where a VPI defines a route through the network

between the sender and the receiver that includes a plurality of network links, see also col. 7,

lines 51-61; and col. 9, lines 26-35, where the "capacity of the link" indicates that the links each

have a predetermined communication resource); coupling the sender unit and the receiver unit to

the core network with sending and receiving gateway elements, respectively (Fig. 1, ref. 210-

320, and col. 4, lines 19-25, where the edge nodes, i.e. gateway elements, are coupled to the

backbone network and customers, i.e. sender unit and receiver unit); allocating to the sending

gateway element a first portion of the predetermined communication resources of at least certain

of the network links forming a communicative route between the sending and receiving gateway

elements (col. 10, lines 21-26, where each edge node may reserve capacity on links, i.e.

allocating to the sending gateway a first portion of the predetermined communication resources,

see also col. 2, lines 58-62 and col. 9, lines 49-53, where the edge nodes are connected using

"pre-provisioned paths," i.e. allocating to the sending gateway element a portion of the

predetermined communication resources of the network links forming the communicative route

between the sending and receiving gateway elements), and maintaining at the sending gateway

element information indicative of the allocated predetermined communication resources (col. 12,

lines 49-54, where, in one embodiment, the edge nodes calculate the status of pre-determined

routes through the network using the total bandwidth used on each link, and col. 9, lines 27-37,

where the status information is determined by a comparison of the traffic on each link to the

capacity of the link, such that the edge nodes must have allocations of the capacity of the links,

i.e. predetermined communications resources on the data links, so that the edge nodes can

perform the status determination, see also col. 10, lines 21-26, where determining the status of

links containing reserved bandwidth requires the edge node to know the allocation of capacity)

and status information indicative of a currently used amount of the allocated communication

resources (col. 12, lines 49-54, where the edge nodes know the total bandwidth used on each

link, see also col. 12, lines 44-49, where each edge nodes tracks the bandwidth that it is using)

and a currently available amount of the allocated communication resources (col. 9, lines 27-37,

where the status information is indicative of an amount of currently available communications

resources of the data links); receiving at the sending gateway element a request from the sender

unit for a data transfer across the communicative route (col. 9, lines 41-42, where the edge nodes

receive set-up requests, i.e. a request from the sender unit for a data transfer across the

communicative route), the request including a specification of requested communication

resource (col. 9, lines 42-45, where the set-up request has a bandwidth requirement), the sending

gateway element checking the status information to grant the request if the currently available

amount of the allocated communication resources of the communicative route is equal or greater

than the requested communication resource (col. 9, lines 49-60, where the edge node grants the

request if there is sufficient capacity on the route, i.e. the currently available amount of the

allocated communication resources of the communicative route is equal or greater than the

requested communication resource).

12.   Regarding claim 3, Buyukkoc discloses allocating a second portion of the predetermined

communication resource of the certain of the network links (col. 10, lines 21-26, where each

edge node may reserve capacity on links, i.e. allocating a portion of the predetermined

communication resource on certain of the network links, see also col. 2, lines 58-62 and col. 9,

lines 49-53, where the term "pre-provisioned paths" indicates that all links in the path will be

"pre-provisioned," i.e. each link will be allocated a portion of the predetermined communication

resource).

13.   Regarding claim 5, Buyukkoc discloses that the predetermined communication resource

is a communication bandwidth (col. 9, lines 26-35, where the "capacity of the link" is a

bandwidth).

14. Regarding claim 6, Buyukkoc discloses that the predetermined communication resource includes a communication bandwidth (col. 9, lines 26-35, where the "capacity of the link" is a bandwidth).

15. Regarding claim 7, Buyukkoc discloses a method of admission control of data to a core network having a number of relay nodes interconnected by data links, the method including the steps of: associating a predetermined data communication capacity with each of the data communicating links (col. 9, lines 26-35, where the "capacity of the link" indicates that the links each have a predetermined communication resource); communicatively coupling sending and receiving gateway elements to the core network (Fig. 1, ref. 210-320, and col. 4, lines 19-25, where the edge nodes, i.e. gateway elements, are coupled to the backbone network); connecting first and second data transfer elements to the sending and receiving gateway elements, respecting, for data communication by a route through the core network containing certain of the data links (Fig. 1, ref. 210-320, and col. 4, lines 19-25, where the edge nodes, i.e. gateway elements, are coupled to customers, i.e. data transfer elements, and col. 7, lines 51-61, where the route, i.e. a VPI, contains certain data links); assigning first and second portions of the data communication capacity of at least the certain of the data links to the sending and receiving gateway elements, respectively (col. 10, lines 21-26, where each edge node may reserve capacity on links, i.e. assigning to the sending and receiving gateways portions of the predetermined communication resources, see also col. 2, lines 58-62 and col. 9, lines 49-53, where the edge nodes are connected using "pre-provisioned paths," i.e. allocating to the gateway elements a portion of the predetermined communication resources of the network links forming the communicative route between the gateway elements); providing the sending gateway element

with information indicative of the first portion (col. 12, lines 49-54, where, in one embodiment, the edge nodes calculate the status of pre-determined routes through the network using the total bandwidth used on each link, and col. 9, lines 27-37, where the status information is determined by a comparison of the traffic on each link to the capacity of the link, such that the edge nodes must know the allocations of the capacity of the links, i.e. predetermined communications resources on the data links, so that the edge nodes can perform the status determination, see also col. 10, lines 21-26, where determining the status of links containing reserved bandwidth requires the edge node to know the allocation of capacity), the sending gateway element responding to a request for data communication of a requested capacity from the first data transfer element by checking the information (col. 9, lines 41-45, where the edge nodes receive set-up requests for a bandwidth, i.e. a request from the sender unit for a data transfer across the communicative route wherein the set-up request has a bandwidth requirement, and col. 9, lines 49-60, where the edge node determines whether to grant the request by checking whether sufficient capacity exists on the route), determining status information indicative of currently used data communication capacity of the certain links (col. 12, lines 49-54, where the edge nodes know the total bandwidth used on each link, see also col. 12, lines 44-49, where each edge nodes tracks the bandwidth that it is using) and currently available data communication capacity of the certain links (col. 9, lines 27-37, where the status information is indicative of an amount of currently available communications resources of the data links), and granting the request if the currently available data communication capacity of the certain data links is at least equal to or greater than the requested capacity (col. 9, lines 49-60, where the edge node grants the request if there is sufficient capacity on the route, i.e. the currently available amount of the allocated

communication resources of the communicative route is equal or greater than the requested

communication resource).

16.   Regarding claim 12, Buyukkoc discloses a system for providing a QoS communication

route from a first communicating entity to a second communicating entity through a core

network that includes a plurality of network links, the system including: a data store comprising

an information table of information indicative of a predetermined communication resource

associated with each network link (col. 10, lines 21-26, where the entity granting the reservation

must track the amount of reserved capacity on each link, see also col. 14, line 18); a sending

gateway element and a receiving gateway element respectively coupling the first and second

communicating entities to the core network (Fig. 1, ref. 210-320, and col. 4, lines 19-25, where

the edge nodes, i.e. gateway elements, are coupled to the backbone network, i.e. core network,

and customers, i.e. first and second communicating entities); wherein the sending gateway

element is configured to be assigned a first portion of the predetermined communication

resources of at least certain of the network links forming a communicative route between the

sending and receiving gateway elements (col. 10, lines 21-26, where each edge node may reserve

capacity on links, i.e. assigning to the sending gateways a first portions of the predetermined

communication resources, see also col. 2, lines 58-62 and col. 9, lines 49-53, where the edge

nodes are connected using "pre-provisioned paths," i.e. allocating to the gateway elements a

portion of the predetermined communication resources of the network links forming the

communicative route between the gateway elements), and to maintain at the sending gateway

element information indicative of the allocated predetermined communication resources (col. 12,

lines 49-54, where, in one embodiment, the edge nodes calculate the status of pre-determined

routes through the network using the total bandwidth used on each link, and col. 9, lines 27-37,

where the status information is determined by a comparison of the traffic on each link to the

capacity of the link, such that the edge nodes must know the allocations of the capacity of the

links, i.e. predetermined communications resources on the data links, so that the edge nodes can

perform the status determination, see also col. 10, lines 21-26, where determining the status of

links containing reserved bandwidth requires the edge node to know the allocation of capacity)

and status information indicative of a currently used amount of the allocated communication

resources (col. 12, lines 49-54, where the edge nodes know the total bandwidth used on each

link, see also col. 12, lines 44-49, where each edge nodes tracks the bandwidth that it is using)

and a currently available amount of the allocated communication resources (col. 9, lines 27-37,

where the status information is indicative of an amount of currently available communications

resources of the data links); and wherein the sending gateway element is configured to receive a

request from the sender unit for a data transfer across the communicative route (col. 9, lines 41-

42, where the edge nodes receive set-up requests, i.e. a request from the sender unit for a data

transfer across the communicative route), the request including a specification of requested

communication resource (col. 9, lines 42-45, where the set-up request has a bandwidth

requirement); the sending gateway element checking the status information to grant the request if

the currently available amount of the allocated communication resources of the communicative

route is equal or greater than the requested communication resource (col. 9, lines 49-60, where

the edge node grants the request if there is sufficient capacity on the route, i.e. the currently

available amount of the allocated communication resources of the communicative route is equal

or greater than the requested communication resource).

17.   Regarding claim 13, Buyukkoc discloses a trunk management system, wherein the

gateway element periodically sends the status information to the trunk management system (col.

12, lines 44-54, where each edge node transmits to the CRSDS (centralized database), i.e. the

trunk management system, the amount of bandwidth that it is using on each link, where the

amount of bandwidth that an edge node is using is, as broadly defined, the status information

since it is "indicative" of an amount of currently used communication resources and an amount

of currently available communication resources of the data links).

18.   Regarding claim 15, Buyukkoc discloses that the sending gateway element periodically

sends the status information to the trunk management system (col. 12, lines 44-54, where each

edge node transmits to the CRSDS (centralized database), i.e. the trunk management system, the

amount of bandwidth that it is using on each link, where the amount of bandwidth that an edge

node is using is, as broadly defined, the status information since it is "indicative" of an amount

of currently used communication resources and an amount of currently available communication

resources of the data links).

Claim Rejections - 35 USC § 103

19.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

20.   Claims 4 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Buyukkoc et al. (USPN 6,463,062), of record, as applied to claims 3 and 7 above, and further in

view of Kenney et al. (US 2002/0122422).

21.   Regarding claims 4 and 8, Buyukkoc does not expressly disclose that the step of checking the information includes reconfiguring the predetermined communicative resource of the certain of the network links to re-allocate at least a portion of the communicative resource allocated to the receiving gateway element to the sending gateway element. Kenney teaches, in a QoS system, that most systems for link sharing allow a form of borrowing so that an "overlimit" entity can temporarily use bandwidth reserved for, but not used by, another entity (¶ [0069]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use Kenney's borrowing system in Buyukkoc's QoS system to permit an overlimit gateway element to borrow capacity from another gateway element. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to reconfigure the predetermined communicative resource of the certain of the network links to re-allocate at least a portion of the communicative resource allocated to the receiving gateway element to the sending gateway element to permit an overlimit sending gateway element to borrow capacity from the receiving gateway element.

22.   Regarding claim 9, Buyukkoc in view of Kenney discloses providing the receiving gateway element with information indicative of the second portion (Buyukkoc: col. 12, lines 49-54, where, in one embodiment, the edge nodes calculate the status of pre-determined routes through the network using the total bandwidth used on each link, and col. 9, lines 27-37, where the status information is determined by a comparison of the traffic on each link to the capacity of the link, such that the edge nodes must know the allocations of the capacity of the links, i.e. predetermined communications resources on the data links, so that the edge nodes can perform

the status determination, see also col. 10, lines 21-26, where determining the status of links

containing reserved bandwidth requires the edge node to know the allocation of capacity).

23.   Regarding claim 10, Buyukkoc in view of Kenney discloses that the step of re-assigning

includes decreasing the information indicative of the second portion by the part of the second

portion re-assigned to the first portion (Kenney: ¶ [0069], where the reassignment would

decrease the information indicative of the second portion by the part of the second portion

reassigned to the first portion when the first portion borrows capacity from the second portion).

24.   Regarding claim 11, Buyukkoc in view of Kenney discloses that the step of re-assigning

includes increasing the information indicative of the first portion by the part of the second

portion re-assigned to the first portion (Kenney: ¶ [0069], where the reassignment would increase

the information indicative of the first portion by the part of the second portion reassigned to the

first portion when the first portion borrows capacity from the second portion).

25.   Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Buyukkoc et al. (USPN 6,463,062), of record.

26.   Regarding claim 14, Buyukkoc does not expressly disclose that the trunk management

system allocates bandwidth of the predetermined communication resources of the data links.

However, Buyukkoc does disclose that the edge nodes reserve capacity in the links (col. 10, lines

21-26). Buyukkoc also discloses that the centralized database, i.e. the trunk management system,

tracks the information capacity of each route, the connectivity information regarding the routes,

and the status of all routes (col. 14, lines 15-22). Therefore, it would have been obvious to one of

ordinary skill in the art at the time of the invention to have the centralized database, i.e. the trunk

management system, allocate the bandwidth of the predetermined communication resources of

the data links since the centralized database already has the information required to perform

these allocations thereby obviating the need to create a separate entity to perform the allocations.

27.   Regarding claim 16, Buyukkoc does not expressly disclose that the trunk management

system allocates bandwidth of the certain links to the route based on the status information

indicative of currently used data communication capacity of the certain links and currently

available data communication capacity of the certain links. However, Buyukkoc does disclose

that the edge nodes reserve capacity in the links (col. 10, lines 21-26). Buyukkoc also discloses

that the centralized database, i.e. the trunk management system, tracks the information capacity

of each route, the connectivity information regarding the routes, and the status of all routes (col.

14, lines 15-22). Buyukkoc further discloses that the centralized database uses the status

information to determine whether or not a link is congested (col. 14, lines 19-22). It would have

been obvious for one of ordinary skill in the art at the time of the invention to have the

centralized database, i.e. the trunk management system, allocate bandwidth of the certain links to

the route based on the status information to ensure that the centralized system does not grant a

request for reservation of bandwidth for an edge node on a link that is already congested.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The

examiner can normally be reached on Mon.-Fri. 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel J. Ryman
Examiner
Art Unit 2616